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Results of an informal survey of Canadian Atlantic mackerel commercial, recreational and bait fishers

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Canada

Foreword

This series documents the scientific basis for the evaluation of aquatic resources and ecosystems in Canada. As such, it addresses the issues of the day in the time frames required and the documents it contains are not intended as definitive statements on the subjects addressed but rather as progress reports on ongoing investigations.

Research documents are produced in the official language in which they are provided to the Secretariat.

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ABSTRACT

For several years researchers and stakeholders have highlighted that Canadian catches of Atlantic mackerel (*Scomber scombrus*) are underestimated, but the extent of the problem is still largely unknown. We launched an informal online survey targeting all Canadian Atlantic mackerel fishers in order to obtain a rough estimate of the proportion of catch which is undeclared (bait, discards and recreational catches). In addition, we asked if fishers observed more small mackerel in 2016 compared to previous years as evidence of an important year class in 2015. Four hundred seventy-six mackerel fishers responded from Québec and the Atlantic Provinces and from bait, recreational and commercial sectors. We found that more than half of all mackerel was used as bait, primarily for the lobster fishery, but also as bait for 11 other species, most importantly bluefin tuna (*Thunnus thynnus*), snow crab (*Chionoecetes opilio)* and Atlantic halibut (*Hippoglossus hippoglossus*). Recreational fishing, generally with rod and line, can also be done semi-professionally with jiggers and gillnets, thus it cannot be considered negligible. Additionally, 1.9% of the catch was discarded, mainly because of undersized fish. As a result of bait use, recreational fishing and discarding, true mackerel catch was about 150% the declared catch, although it is known that this derives from biased sampling. About half of the fishers who responded indicated that small mackerel were plentiful in 2016, indicating that the 2015 year class of mackerel may have been larger than observed in recent years.

Résultats d'une enquête informelle auprès de pêcheurs canadiens de maquereaux Atlantique à des fins commerciales, récréatives et appât

RÉSUMÉ

Depuis plusieurs années, les chercheurs et les intervenants ont souligné que les prises canadiennes de maquereaux bleus (*Scomber scombrus*) sont sous-estimées, mais l'étendue du problème est encore inconnue. Nous avons lancé une enquête informelle en ligne à l'intention de tous les pêcheurs canadiens de maquereau afin d'obtenir une estimation approximative de la proportion de prises non déclarées (appâts, rejets et prises récréatives). De plus, nous avons demandé si les pêcheurs ont observé une proportion nettement plus importante de petit maquereau, soutenant l'idée qu'une nouvelle cohorte arrive. L'étude a porté sur 476 répondants des 4 provinces de l'Atlantique et du Québec, qui ont pêché le maquereau pour l'appât ou à des fins récréatives ou commerciales. Nous avons constaté que plus de la moitié du maquereau était utilisé comme appât, principalement pour la pêche au homard, mais aussi pour appâter 11 autres espèces; le thon rouge (*Thunnus thynnus*), le crabe des neiges (*Chionoecetes opilio)* et le flétan atlantique (*Hippoglossus hippoglossus*) étaient les plus fréquentes. La pêche récréative, généralement avec la ligne à main, peut également être pratiquée semi professionnellement avec des turluttes et des filets maillants, de sorte qu'elle ne doit pas être négligée. De plus, 1,9 % des captures ont été rejetées, principalement à cause de la petite taille des poissons. En raison de l'utilisation d'appât, de la pêche récréative et des rejets, la capture réelle de maquereau représenterait environ 150 % de la capture déclarée, nombre qui devrait cependant être pondéré pour équilibrer l'échantillonnage biaisé. En outre, environ la moitié des pêcheurs ont indiqué que le petit maquereau était abondant en 2016, ce qui indique que la classe d'âge de 2015 aurait pu être plus importante que les classes d'âge observées dans les années récentes.

INTRODUCTION

Mackerel from the northwest Atlantic (*Scomber scombrus*) is a transboundary stock with seasonal migrations between North Carolina (USA) and Eastern Canada, as far north as southern Labrador. The landings declared by Canadian fishers fell sharply after 2010 and stock biomass is currently considered to be at the lowest point ever recorded. It is known that an important portion of mackerel catches in Canada are unreported and that given the current depressed stock state, it is particularly important to account for this uncertainty in stock assessment.

In the past several years, advisory reports stressed that Atlantic mackerel official catch statistics are largely underestimated (DFO 2014). There are no legal requirements to report catch used as bait for personal use or sold between fishers, although DFO's Quebec and Newfoundland Region are in the process of implementing mandatory log books. As mackerel is one of the main bait species for large-scale fisheries such as lobster and crab, unreported catch is expected to be substantial. In addition, mackerel is caught recreationally throughout Eastern Canada at many wharves and aboard chartered vessels. Recreational fishing at this scale is assumed to contribute significantly to the underreporting issue. Only little attention has been given to quantifying the use of mackerel as bait and mackerel removals from recreational fishing or discards, even though catch underestimates can have an important impact on stock assessments (Griffiths 2015, Rudd and Branch 2016). The few official data sources available focus on a restricted area (e.g. Quebec, Côté-Laurin et al. 2014) or were collected as a requirement by the Marine Stewardship Council for the lobster or crab industry to obtain ecocertification (e.g. MSC 2012, 2014).

Additionally, it would be useful if strong recruitment pulses, most likely attributable to good environmental conditions (Duplisea and Grégoire 2014), could be detected ahead of the new cohort's entry into the fishery (e.g. for forecasting). The year 2016 is a good opportunity to explore this possibility, as in August 2015 an unusually large amount of small (mostly 4 cm - 14 cm or age 0) mackerel were captured in the DFO scientific bottom trawl survey in the Northern Gulf of St. Lawrence (Bourdages et al. 2016). This signal might indicate that a strong cohort is about to enter the fishery. However, scientific bottom trawl surveys do no accurately reflect mackerel abundance because mackerel catchability is low and subject to changes due to their high swimming speed and variations in their position in the water column and schooling behavior. Therefore, observations from fishers might be useful to confirm the arrival of a strong cohort.

Many methods exist to obtain information about a specific fishery (telephone surveys, mixed surveys, etc., Griffiths et al. 2013), most of which are cost prohibitive and ineffective when the fishery is very heterogeneous, takes place over vast spatial scales and the number of fishers is large. This is unquestionably the case for the Canadian mackerel fishery, which spans five provinces, consists of an important recreational, bait and commercial fishery and uses a variety of gear types. Online surveys are a cost-effective method to gather a large amount of data in a short time span, and are therefore particularly well suited for the Canadian mackerel fishery. Indeed, such surveys have become increasingly popular in recent years, especially for recreational fishing (e.g. Ferter et al. 2013). There are however some well-known pitfalls with the use of online surveys, such as non-response bias (respondents might be different from non-respondents), that can make results less reliable (Duda and Nobile 2010). Keeping this in mind, the online survey remains an efficient tool if information is required to obtain rough estimates, expand general knowledge or explore future research or management options.

We launched an informal online survey aimed at Canadian Atlantic mackerel commercial, recreational and bait fishers. Our main objectives were to;

1) Obtain a rough estimate of the proportion of catch that is used for bait, caught recreationally or discarded, and hence the catch reporting rate.
2) Verify if a larger proportion of small mackerel has been witnessed in 2016, so the recent recruitment hypothesis can be examined.

METHODS

The "Google forms" platform was used to create an online survey of 12-13 questions (depending on the first answer) directed towards all Canadian Atlantic mackerel fishers, but in particular to commercial and bait fishers (Appendix 1). Commercial and bait fishers are together referred to as licensed fishers (in contrast to recreational fishers). Participation was anonymous, no question was obligatory and most questions were open-ended so that fishers were free to provide additional information. The survey was sent on 2016-10-17, which happened to be soon after the TAC (Total Allowable Catch, 8,000 t) was reached and the fishery was closed; the survey was kept online as long as answers were being submitted (i.e. 2016-12-04). The survey was sent twice by email in French and English to 3,453 e-mail addresses (excluding failed deliveries) of licensed fishers of Quebec (QC), New Brunswick (NB), Nova Scotia (NS) and Prince Edward Island (PEI). Newfoundland (NL) could not be included in the mailing lists as DFO's Newfoundland Region could not provide email contact information of their fishing industry. Additionally, links were posted on three Facebook groups (using a copy of the English form) and an online forum. A live radio interview was broadcasted by the CFIM radio station of the Magdalen Islands and an article with the appropriate information appeared in a local Nova Scotia newspaper (NovaNews).

RESULTS AND DISCUSSION

SURVEY POWER

A total of 476 non-empty forms were submitted by fishers containing at least one useful answer. Of those, 11% were in French and 89% were in English. The vast majority of questionnaires were returned thanks to the emails and 7% were returned through Facebook. As we do not know the true number of active fishers (licensed or recreational), it is impossible to determine the exact scope of the survey. However, 8,082 licenses were emitted in 2014 (DFO 2016), of which an unknown but potentially large proportion is inactive; in the official DFO statistics of 2015, only 407 vessels reported catch. Therefore, at the very least 5% of the active licensed fishers (N=390) answered the survey (86 answers were from recreational fishers). Additionally, the total catch indicated by survey participants to be reported in the official statistics for 2016 was 1591 t (Appendix 1; How much did you catch? What is the percentage for which purchase slips were obtained?), which represents around 20% of the TAC of 8,000 t. Although the total declared catch might be somewhat higher than the TAC (thus lowering this percentage), the missing reported catch is likely to be in large part from NL fishers, as very few were reached by this survey for reasons outlined above. Hence, it is likely that an even larger fraction of the catch of the other provinces was sampled. Indeed, most participants were from NS (185), followed by PEI (105), QC (58), NB (53) and NL (14). There are 61 forms where the survey participant did not indicate its location. Figure 1 shows that except for NL, the survey had an adequate geographic coverage. Thus, if results for the whole area are used, they should be weighted by province and if possible by fishing activity or even gear (see below). Ideally a complementary study (e.g. telephone survey) should be used to identify and correct some potentially biased

estimates, despite our relatively large sampled proportion of the active mackerel fishers. In addition to the results below, the final comments given by participants are provided in Appendix 2.

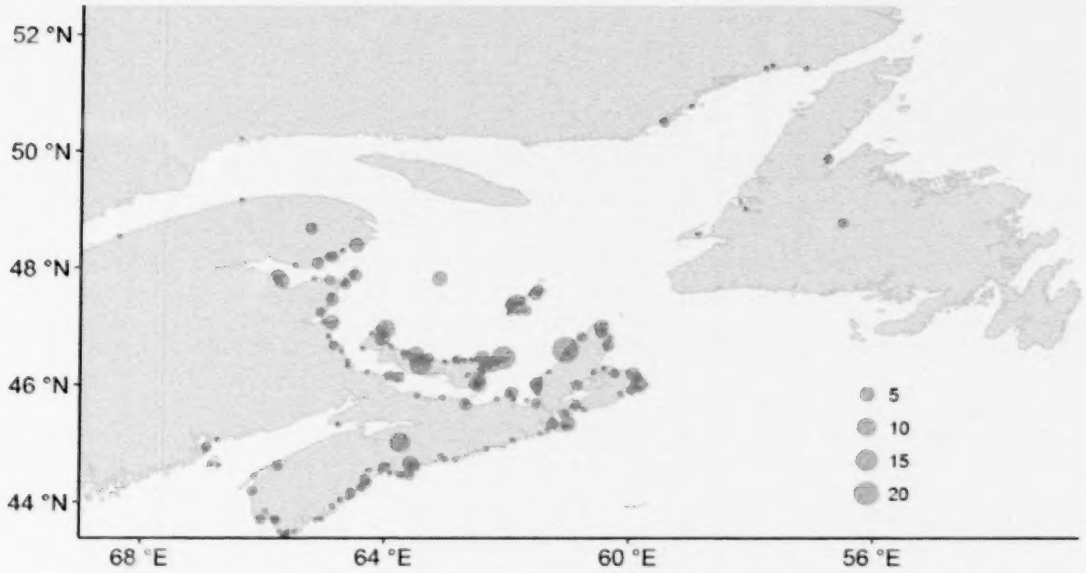

Figure 1. Ports where mackerel was landed by survey participants. Dot size is proportional to the number of survey participants and dots off the coastline result from imprecise answers (Gaspé, Newfoundland, Nova Scotia, Prince Edward Island, Magdalen Islands, Cape Breton and the Gulf).

CHARACTERISTICS OF THE FISHERY

Activity types

Most survey participants classified their fishing activity as bait fishing (40%). The proportion of survey participants that fished commercially (19%) and recreationally (15%) was however also important (Figure 2). Fishers who filled out the survey and self-identified as having mixed activity most often combined commercial and bait fishing, whereby commercial fishing represented on average a somewhat larger proportion of their catch. The proportion of bait fishers was relatively similar between provinces (33-49%), but the percentage of recreational (0% for NL - 38% for NB) and purely commercial (6% for NB - 43% for NL) fishers was more area-dependent.

Bait use

Individual bait fishers used mackerel as bait for up to four different commercial species (on average 1.55 species), lobster being by far the most common (Figure 3). However, 11 other fisheries also used mackerel for bait, with tuna, snow crab and halibut being the most important. There were no major spatial differences, as the main fisheries using mackerel for bait were roughly the same between provinces and lobster was always the most important fishery using mackerel as bait.

Gear use

The most commonly used gear type by survey participants was the jigger, especially in NS and PEI (Figure 4). Three other gear types were also frequently used: handlines, rod and line and gillnets. Although only 12 seiners replied, 7 of them were from NL. Differences in fishing gear reflect the previously mentioned dissimilarities in fishing activities between the provinces: commercial fishing is most important in NL, whereas in NB fishers fished mackerel mainly for recreational and bait purposes.

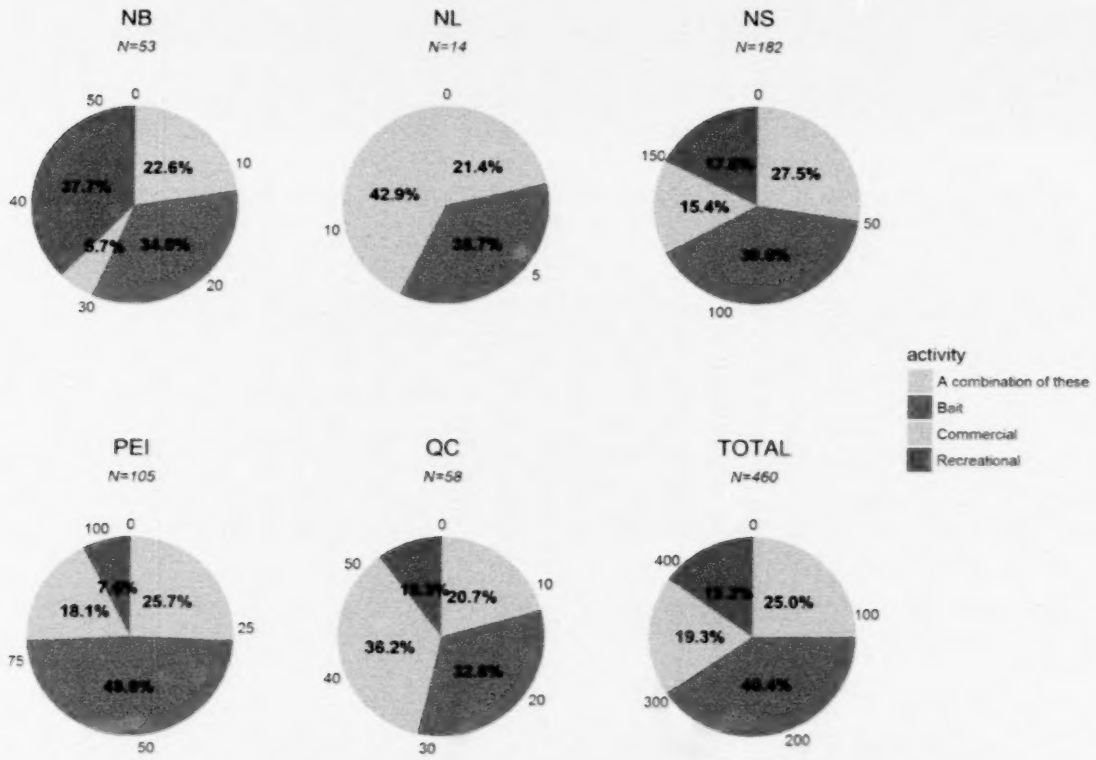

Figure 2. Pie charts showing the repartition of the type of fishing activities Canadian Atlantic mackerel fishers (percentages of abundance) reported in the survey, by province, and for the whole Eastern Canadian coast (TOTAL). The total includes survey participants from all provinces plus those who did not indicate their province of origin.

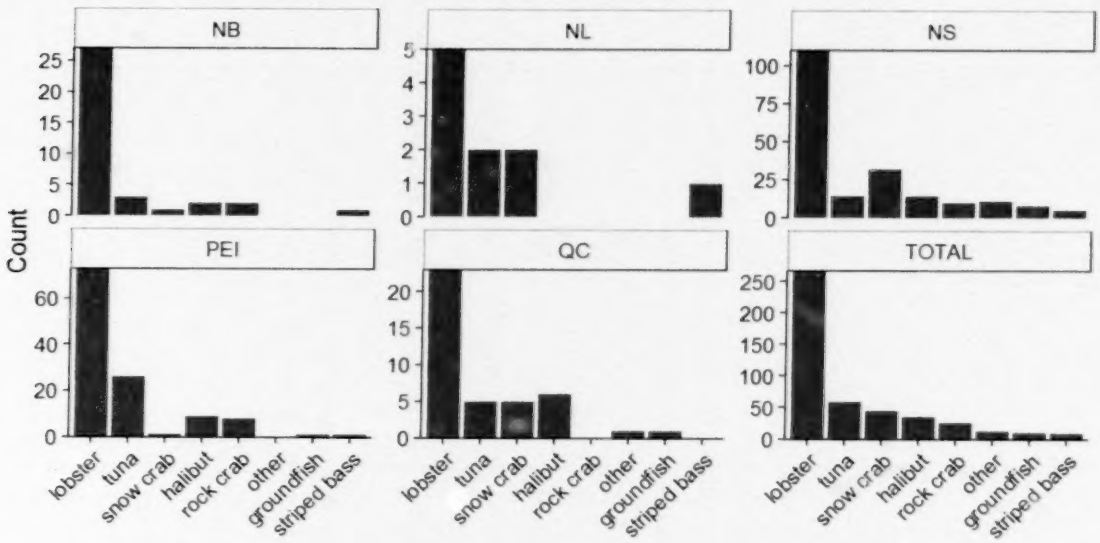

Figure 3. Barplots of the number of fishers that use mackerel as bait for other species, by province and for the whole Eastern Canadian coast (TOTAL). The group "other" includes cod, eel, haddock, green crab, shrimp, whelk and mackerel used for longlining and trawl bait. One fisherman can use mackerel as bait for more than one species, so that the total numbers are higher than the total number of survey participants.

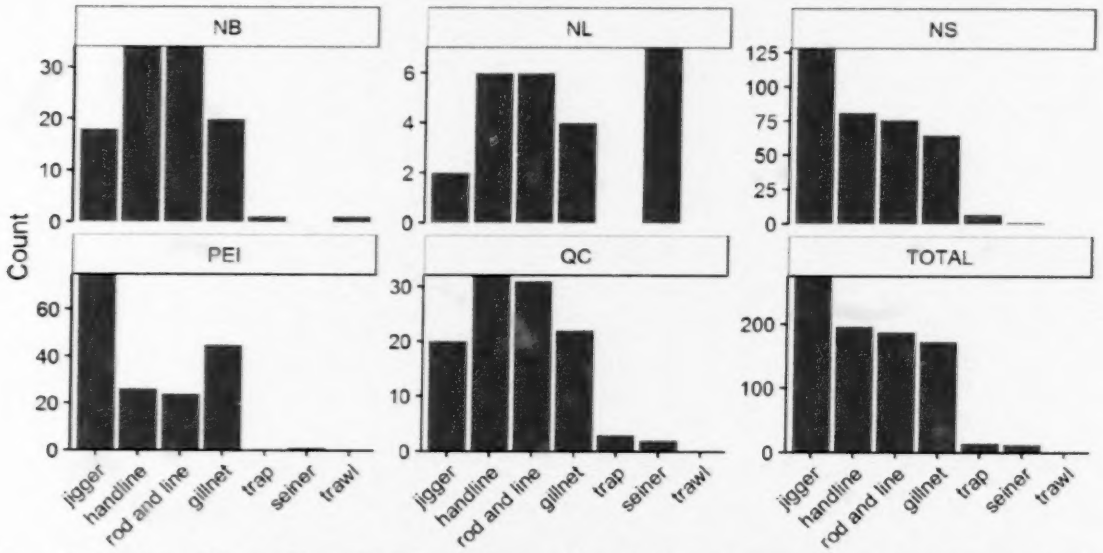

Figure 4. Barplots of the number of fishers that use each gear type, by province and for the whole Eastern Canadian coast (TOTAL). One fisherman is not restricted to one gear type, so that the total numbers are higher than the total number of survey participants.

CATCH BIOMASS

The survey participants indicated that they caught a total of 2 447 t of mackerel in 2016 (of which a part is not included in the official DFO catch statistics). Of those, 6 t (0.2 %) were from recreational activities, 1,250 t (50.6%) were from commercial activities, 491 t (19.9%) were for bait use and 723 t (29.3%) were from a mix of activities.

The biomass of mackerel caught recreationally was small to negligible for all provinces (<1.7%, Figure 5). However, the survey targeted mainly licensed fishers, and therefore recreational catches are most likely underestimated. This underestimation might be important because of the high average (92 ± 172 kg) and maximum (907 kg) catch declared by recreational fishers, which are explained by the fishing gear used. That is, out of the 69 recreational fishers who responded, 60 (87%) fished with rod and line, but 12 (17%) used a jigger, 2 (3%) a gillnet and 1 (1%) a handline, possibly in combination. Although recreational fishing is sometimes performed at a semi-professional scale, the large majority are clearly rod and line fishers, a proportion that is likely underestimated due to the difficulty to reach occasional wharf fishers.

Even though twice as many bait fishers responded to the survey than commercial fishers, at least half of the total catch declared by respondents was attributed to the commercial fishery (Figure 6). Indeed, commercial fishers caught on average 21 t (± 31 t, max: 158 t) whereas this average was much lower for bait fishers (3 ± 8 t, max: 91 t). Yet again, commercial catch was most important in NL, bait in NS and recreational catch in NB. This is also reflected in the total catch declared per province (e.g. high for NL) in relation to the number of participants (e.g. low in NL).

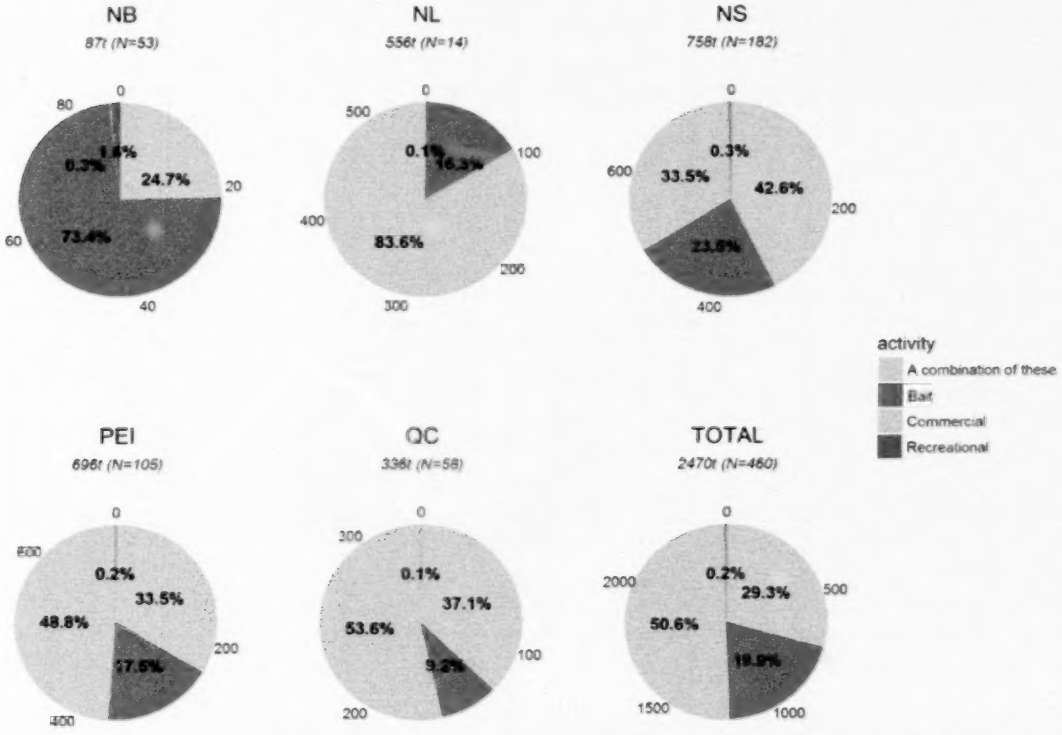

Figure 5. Pie charts showing the repartition of mackerel catches (percentage) by type of activities for each province and for the whole Eastern Canadian coast (TOTAL).

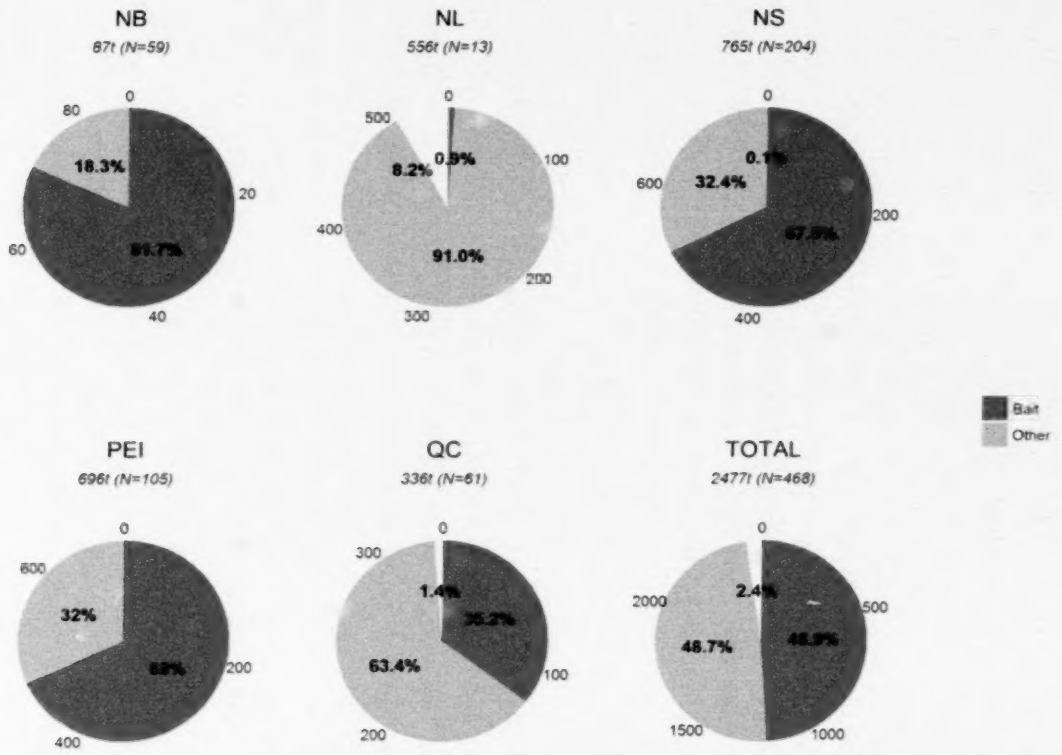

Figure 6. Percentage of catch used as bait (red) or other purposes (grey) by province and for the whole Eastern Canadian coast (TOTAL). White areas in the pie plots are unclassified catch. Mackerel sold by commercial fishers to a middleman can be categorised as "Other" but still end up as bait.

Because bait mackerel constituted an important fraction of the catch, a significant part of the landings (34.3%) was not reported in the official statistics (i.e., no purchase slip was obtained, Figure 7). In other words, the actual catch is about 150% the reported catch. However, this percentage is biased because provinces like NL have almost full catch reporting since their fishery is primarily commercial (Addison et al. 2013) while NB has only a small commercial fishery that is required to report catch fully.

We were also interested in knowing how the proportion of unreported catch evolved over the last decades. Because many participants wrongly interpreted this question, results will not be presented here. However, some changes in the ratio of unreported to reported catch were underlined in the comments. In Quebec, mackerel commercial license holders have been required to complete logbook and to report catches of all species since 2015. Therefore Quebec catch underreporting may have been higher before 2015. This is in contrast to PEI, NS and NB, where reporting rates may be lower currently than previously. This is because the prices for fresh mackerel from plants are quite low and fishers can earn more by selling directly to fishers who need mackerel for bait. Also, the ratio of declared to undeclared catches probably varies through time. Catch will be reported more frequently once the threshold of bait needs has been surpassed (bait being of prime importance to many fishers), but there is no indication of when that occurs and how this threshold varies over the years.

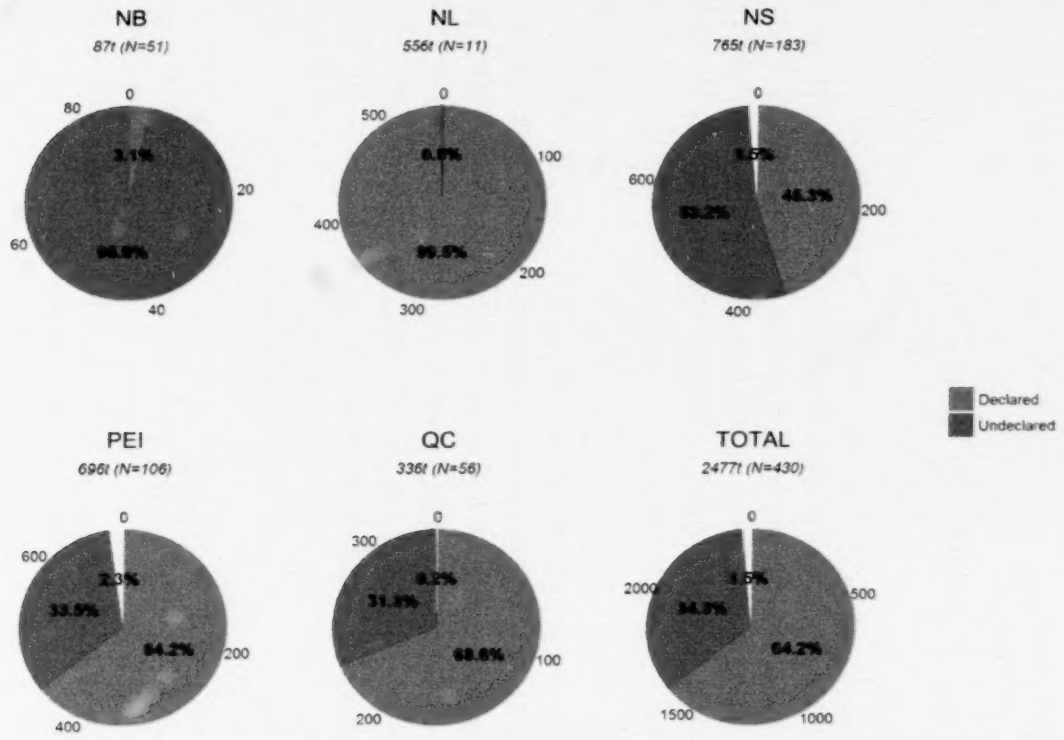

Figure 7. Percentage of catch reported (green) and unreported (red) by province (NB; New Brunswick, NL; Newfoundland, NS; Nova Scotia, PEI; Prince Edward Island, QC; Quebec) and for the whole Eastern Canadian coast (TOTAL). White areas in the pie plots are unclassified catch.

PREDICTING A NEW COHORT

Fishers did not unequivocally agree whether or not a clearly larger proportion of small mackerel was present in 2016, which could have been an indication of a good 2015 year-class. Nonetheless, 49% believed there was an upsurge of small individuals, in disagreement with 37% who thought differently and 13% who were unsure. The answers might have depended on fishing area (if small fish were heterogeneously distributed), on fishing gear (if size selectivity differs) or on fishing activity (if recreational fishers were not able to distinguish such changes because they catch too few fish). No spatial gradient was visible in the answers (Figure 8) and when recreational fishers were removed the percentage of fishers answering positively declined (46.1%). Conversely, a visible increase in smaller fish was noticed more frequently by fishers using a handline, a jigger or a rod and line, whereas gillnet fishers most often did not identify such a rise (Figure 9). For example, out of the 32 participants that exclusively used gillnets and filled in the question related to small mackerel, only 6 (19%) answered positively. Additionally, the percentage of participants having observed a large amount of young mackerel might be higher because of stakeholder bias. According to the comment of one respondent, fishers might not have mentioned the presence of abundant small fish because they believed that an important decrease in average fish size would lead to a fishery shutdown or a TAC decrease. Thus, although we cannot definitively confirm the presence of a strong 2015 year-class from this survey, the responses did not refute the hypothesis either.

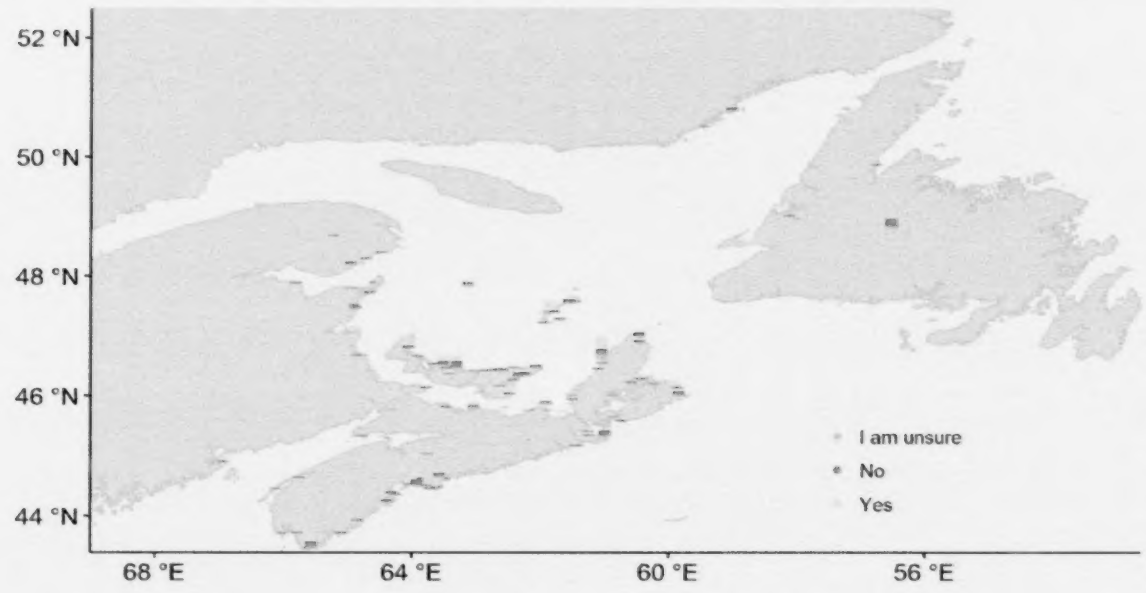

Figure 8. Map of West Atlantic Canada with a stacked barplot (counts) for each port with the number of fishers indicating whether in 2016 a clearly larger proportion of small mackerel was present (yes, no or unsure).

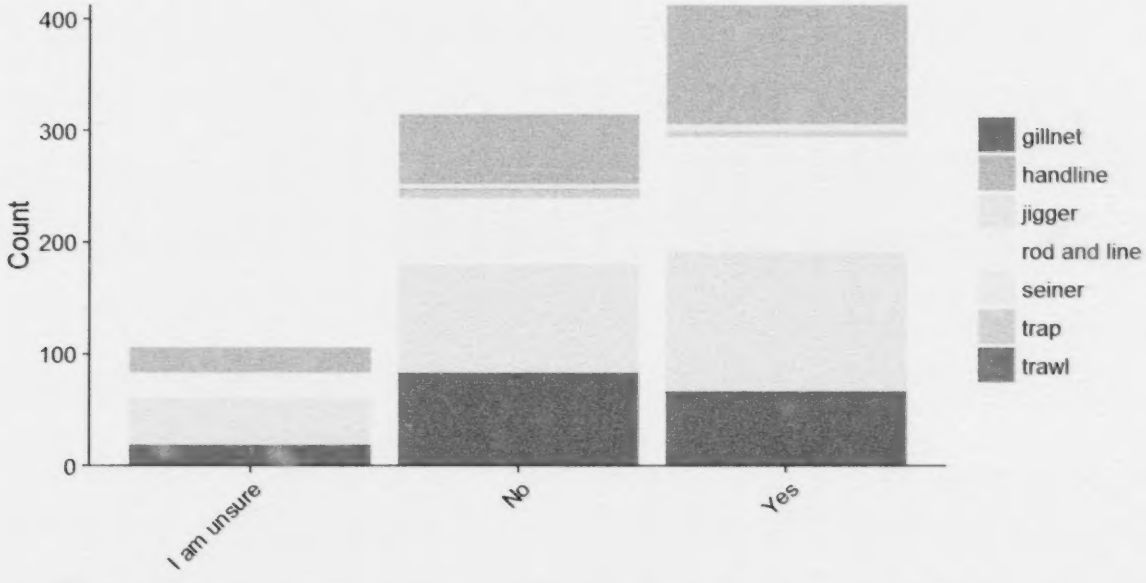

Figure 9. Stacked barplot of the numbers of each answer by fishing gear to the question: "In 2016, did you capture a clearly larger proportion of small mackerel?" Note that multi-gear fishers are counted more than once and that a fisher indicated as e.g. a jigger in the plot might thus also be a handliner.

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APPENDIX 1: SURVEY

Informal survey of Canadian Atlantic mackerel commercial, recreational and bait fishers

I am a post-doctoral researcher from Belgium working in Canada on northwest Atlantic mackerel, together with scientists at the Maurice-Lamontagne Institute (DFO). In order to better estimate the size of the Canadian mackerel stock, I would like to have first-hand experiences of commercial, recreational and bait mackerel fishers on their activities. With better estimates of the mackerel stock size and its productivity I hope to be able to provide better management advice and stock predictions.

The survey consists of 6 small parts and for most of the questions (about 12) there is space to write an explanation if you wish (and appreciated!). Unless specified otherwise, all questions concern the 2016 fishing season.

This survey is completely anonymous and personal identifying information is not even collected by me.

I would like to thank you in advance for filling in this survey. Please feel free to contact me by email or phone in addition to the survey.

Elisabeth Van Beveren
elisabeth.vanbeveren@dfo-mpo.gc.ca
418 775-0563

Enquête informelle sur la pêche au maquereau au Canada

Je suis une scientifique postdoctorale Belge, venue au Canada pour travailler sur le maquereau du nord-ouest de L'Atlantique, avec des chercheurs de l'institut Maurice-Lamontagne (MPO). Pour améliorer l'estimation de la taille du stock canadien, j'aimerais recueillir des renseignements de première main sur la pêche commerciale, récréative et pour appât. Ceci me permettra d'améliorer les prédictions et les avis scientifiques pour la gestion du stock.

L'enquête est divisée en 6 petites parties, avec pour la majorité des questions (environ 12 en totale) suffisamment d'espace pour fournir une explication si souhaité (très apprécié!). Sauf indication contraire, toutes les questions concernent la saison de pêche de 2016.

L'étude est anonyme, et de l'information personnelle ne sera jamais demandée.

Je termine ce message en vous remerciant à l'avance de bien vouloir participer à ce sondage. Si vous avez des questions ou de plus amples informations, n'hésitez pas à me contacter.

Elisabeth Van Beveren
elisabeth.vanbeveren@dfo-mpo.gc.ca
418 775-0563

1. Fishing activity

Q: How would you classify your fishing activity?
(Multiple choice)

- Commercial
- Bait
- Recreational
- A combination of these
- Other: ...

⇨ If Bait:

Q: Please indicate the species for which you catch bait mackerel
(Checkboxes)

- Snow Crab
- Lobster
- Rock crab
- Tuna
- Striped bass
- Other: ...

⇨ If a combination of these:

Q: Could you provide us an approximation of the proportion of catch attributed to each of your fishing activities? (e.g. 10% of the mackerel I caught was during bait fishing and 90% when fishing commercially)
(Open answer)

Activité de pêche

Q: Comment classifierez-vous votre activité de pêche?

- Commerciale
- Appât (Boëtte)
- Récréative
- Une combinaison
- Autre: ...

⇨ Si appât:

Q: Indiquez pour quelles espèces vous pêchez le maquereau comme appât.

- Crabe de neige
- Homard
- Crabe de roche
- Thon
- Bar rayé
- Autre: ...

⇨ Si une combinaison:

Q: Pourriez-vous nous indiquer approximativement quelles proportions de vos prises résultent de quelles activités? (par exemple, 10% des maquereaux ont été capturés pendant la pêche pour appât, et 90% pendant la pêche commerciale)

2. Gear type

Q: What gear type do you use?
(Checkboxes)

- Tuck-Ring Seine
- Seiner <65' (<19.8m)
- Seiner >65' (>19.8m)
- Other Seine
- Gillnet
- Trap
- Jigger (including mechanized jigger)
- Rod and line
- Other: ...

Type d'engin

Q: Quel type d'engin utilisez-vous?

- Senne "Tuck"
- Senne Bourse <65' (<19.8m)
- Senne Bourse >65' (>19.8m)
- Autres Sennes
- Filet maillant
- Trappe
- Turlutte
- Ligne à main
- Autres

3. Area

Q: What is the region where you did most of your fishing?
(Open answer)

Q: Where were the fish landed?
(Open answer)

Zone de pêche

Q: Dans quelle région est-ce que vous pêchez habituellement?

Q: Où est-ce que vous débarquez les maquereaux?

4. Catch weight

The next couple of questions are about the quantity of mackerel caught, and what happened with them afterwards. I am aware that it might be very hard to provide an exact number, but even a rough estimate would be of great help (especially if this is commented in the answer!). Also, although all questions are related to the 2016 fishing season, it would be extremely helpful if the question could, if possible, also be answered for the 2 previous years.

Q: How much mackerel did you approximately catch during the 2015 and 2016 seasons (lb per season)? (This might for example include catch that was not landed, used as bait or for personal consumption).
(Open answer)

Q: Could you please indicate for what percentage of your total catch (or lb) you obtained purchase slips? (Open answer)

Q: About how much of the total catch (lb or %) was used as bait (for personal or someone else's use)?
(Open answer)

Q: Is there a part that might not have been landed? Would you be able to provide an estimate of this (lb or %)?
(Open answer)

Le poids de captures

Les questions suivantes concernent le poids des prises, et ce qu'il adviendra par la suite. Je suis consciente de la difficulté de spécifier des quantités exactes, mais même une estimation approximative a de la valeur (et particulièrement si ceci est noté!). Toutes les questions concernent 2016, mais je serais aussi très reconnaissante pour de l'information sur les deux années précédentes.

Q: Combien de maquereaux avez-vous capturé pendant la saison de 2015 et 2016 (lb par saison)? (Ceci pourrait par exemple inclure des captures non débarquées, utilisées comme appât ou pour consommation personnelle)

Q: Pourriez-vous indiquer le pourcentage des prises totales (ou les livres) pour lequel vous avez reçu des bordereaux d'achat?

Q: Quel pourcentage (ou lb) des prises totales a été utilisé comme appât (pour usage personnelle ou non)?

Q: Est-ce que il y avait une partie des prises qui n'a pas été débarquée? Pourriez-vous nous donner une estimation (lb ou %)?

5. Experience

Q: For how many years have you been fishing mackerel?
(Open answer)

Q: Do you believe that the proportion of declared landings (for which you got a purchase slip) changed over those years (e.g. increased or decreased)?
(Open answer)

Q: In 2016, did you capture a clearly larger proportion of small mackerel?
(yes/no/I am unsure)

Comments

Q: If you have any comments about the survey or mackerel fishing, feel free to note them down below.
(Open answer)

Confirmation message

Thank you very much for your participation in this survey, your knowledge will be of great help to me. You should note that, whichever the fishery, a more complete accounting of catches will allow scientists to provide better stock assessments. I repeat that this poll is completely anonymous

Expérience

Q: Depuis combien d'années pêchez-vous le maquereau?

Q: Croyez-vous que la proportion des débarquements déclarés (pour laquelle vous avez reçu un bordereau d'achat) a changé pendant ces années (par exemple ont-ils baissé ou monté)?

Q: En 2016, est-ce que vous avez pêché une plus grande proportion de petits maquereaux?
(oui/non/je doute)

Commentaires

Q: Si vous avez encore des remarques concernant l'enquête ou de l'information sur votre activité de pêche, n'hésitez pas à les formuler ici.

Message de confirmation

Je vous remercie beaucoup pour l'information que vous nous avez donnée. Sachez que, peu importe la pêche, l'évaluation des stocks faite par les scientifiques sera supérieure avec une meilleure connaissance des captures. Je répète que ce sondage est tout à fait anonyme.

APPENDIX 2: COMMENTS

Table S1. All comments provided by the survey respondents. Comments such as "no comments" or "did not fish" were removed and identifying information (names, phone numbers and locations) was replaced by "X".

	Comments
1	This year I seen many many more large mackerel around that I haven't seen in many years.
2	A hook and line or reels won't hurt any amount of quota compared to seiners, not hardly enough from a school as a seiner takes all
3	I have not fished for bait while lobstering the last two seasons but i am considering doing it again next year but the previous years to that I have always fished for bait during lobster... when i first started always herring is what i caught but the last year 2014 was mostly mackerel that i used only had two nets but would have anywhere from 100lbs to 500 lbs daily
4	need to restrict the seiners, when they set around a school they take and or destroy a large portion of the resource. netting and handlining is more selective.
5	2016 was the best season in years
6	I didn't get opportunity to catch my bait for next spring lobster season and this will hurt next year as the cost of purchasing bait increases every year and anticipate a high price with for poor quality bait. When you catch your own you know what you have for quality and size and not dependant on getting to the wharf and them only having frozen herring to offer you for next day!
7	Gill net fishery you don't catch small mackerel hook and line or jigs you catch everything lot of small
8	I have fished my whole life , with macjerel.it seems there gas been a huge decline , in my opinon in the methods used .. seiners and traps , will wipe out a whole school , where nets and handline only capture a small portion . i do not fish small mackere , if they are small i stop fishing and move on to try to find a different school of a different or wait for later in the season for the fish to grow . I my self fish with nets and handline , which in my time have seen a increase in our area around X . It is my belief , that the receationak fisherman should be regulated as we are with bein comercial . i sincerely hope this survey is taken serious and acted apon , as im sure there are many fishermen who feel the same way . Mackerel fishing can be good again , but its all in the method of fishing not just mackerel but herring as well being wiped with certian methods of fishing . If nobody else sees it thier blind or igronant to the facts in my opinon . No offense but do the math , 1 net , 3000 lbs at the most ... of a big size to mash . a seine , there is no limit as to what it can hold .. and the size is smaller . PLEASE DO THE MATH AND YOU WILL SEE THE CONNECTION ... i would like a response if you are able ?
9	In my opinion, the mackerel fishery should not be open until early October, the mackerel are typically smaller through the summer months and much easier to catch closer to shore. I have always felt a later opening would allow the smaller mackerel to migrate out and the larger fish to come in closer to shore. I delayed fishing this season due to the reports of undersized mackerel and am aware DFO had found a lot of small mackerel being brought in. Personally I am happy the fishery was suspended and hope that DFO comes up with a management plan that fishers will adhere to.
10	There have been a large number of mackerel this season on the surface. It is the first time that this as been seen in these numbers since the seventies . Last week October 12 th there as been sightings of mackerel on the surface which is getting late in the year for this region. People caught mackerel this year from 10 cm long up to 2.5 kgs in weight . The later in the season the mackerel seem to have gotten bigger but there is still some smaller around . I hope I have helped you , if you have anymore questions just ask I will answer the best that I can .
11	In July and August especially it varied from day to day with small mackerel. But not that it's mid October the big bloater mackerel are in full force and a lot of us fisherman don't have what we need for bait next year, and by the sounds of things bait will be hard to come by next season so we need it reopened again as the small mackerel are a thing of the past this season
12	90% de petit maquereau
13	i have noticed that all the spring macks we use for lobstering are huge and all full of spawn seems like a bad time to be catching fish just befor spawning and during summer months the macks are mostly 3-9 in with very few bigger ones around but there is any amount of small ones all summer so where are they going when the grow and why are they not comming back here as adults to stay .my thought water temp to warm but im not sure
14	In 2016 the mackerel seem to be larger. In 2015 in late Oct and Nov there was an abundance of good sized mackerel off X.

	Comments
15	I am a lobster and mackerel fisherman so mackerel is good part of my income so I would appreciate the outcome of the survey
16	I haven't fished mackerel enough to give truthful comments
17	This year was a smaller run of mackeral and fewer around but 2015 was one of the bigger runs and they were plentiful all summer and fall ,
18	The seiners should be stopped,and the drift netting should be stopped also.The mackerel fisher is over fished,just like the cod and the herring.
19	I fish mackerel in the spring majority of mackerel are big how ever this summer there was all kinds of mackerel majority 90% small 10% of nice big stuff that we catch here in the spring.
20	Seems to be less every year
21	I personal think the water temperture and lack of fresh water running into our oceans kept the larger and bigger schools of mackerel out it deeper water. We caught large mackerel deeper this year. I think we need fresh rain water to grow plankton and other small organisms that crill feed on and then mackerel feed on the crill . Any mackerel that I checked to see what the were feeding on had nothing it there stomach I think if we were aload to finsh this year it would give us a better understanding of what the stock is doing the amount of small mackerel is a good sign for future years to come. I am very concerned about people misreporting there catch and even reporting catch without even going fishing just so that if it comes down to inaviaual quota they will get some
22	Much smaller mackerel caught summer of 2016 compared to larger mackerel caught in summer of 2015
23	mackerel went by earlier this yrs,,,why ,, not sure,,,warmer water maybe
24	J'espère qu'on va avoir des bon résultat et de bonne réponse mais pour ma par je pense que çà vien de plus loin exemple ´ juste avoir un œil sur les gros seineur il y a une grosse partie du problème là merci
25	beaucoup de petits maquereaux
26	The one thing I have noticed in the last few years is the increasing amounts of small mackerel, 6 to 8 inch and the decrease in larger mackerel. any place I tried jigging this year I could have loaded the boat with small ones yet be lucky to get a couple of decent size ones . Thanks for your work on this subject !
27	Larger mackeral seem to show up in late October early November and even into decembber
28	90 % de mes débarquement n'ont pas de bordereau a cause que ça été vendu directement aux pecheurs et dans ce sondage a l utilisation comme appât c'est le montant que j ai vendu aux autres pecheurs = 90% et le 10% a été vendu a l usine avec bordereau
29	Don't close it down
30	2016 was a bit of an if year for mackerel but in any fishery it's like that things change fish seem to do thinks a little different each year we as fisherman have seen this happen before. It didn't seem to matter where we dropped our hooks there was mackerel there but most spots the fish were to small it was a lot of searching to find the bigger ones.
31	over 40 years the time we catch them has relay changed size changes yearly it seems
32	I use mackeral for bait alone. This shut down pushed price of bait through roof!
33	I believe that your not getting enough science from the fisherman
34	Something has to be done ! They larger Mackerel are being all caught before they enter our Canadian Waters ! The other Countries are Killing Them Off At a High Rate on which it Will Cause Dire consequences !
35	this year the mackerel was very small and i mean between 8 to 12 inches the bait buyers did not buy any because of the size and no amount to talk about.In myopinion the mackerel must be closed from all fishers for the next 5 years in the golfe and bay chaleurs before we have a crises like the cod fisheries. I hope my comments don"t fall on def ears. Thanks for including me in yours survey.
36	Mackerel caught in July to the middle of August were of large size, since then to October I would randomly check the area and it has been mostly undersized mackerel for the most part. So, fishers haven't had landings since middle of August.

	Comments
37	There is a clear uneven advantage to the fishery when it comes to hook/line(jig) and small/medium/large seine gear! Hook line fisherman using 2-3 hand crank reels would on a spectacular season catch approximately 150-200,000 lbs per boat and can very easily be monitored for sizes by the fisherman because we fish into tanks or pans. Seines if using the required measurement plan put in place for small inshore fleet would be highly unreliable in determining if the catch in a loaded seine is deemed fishable! 4 samples of 50 fish with 10% of those 50 fish by count ,not weight that are under 10 3/8" in size is very easy to distinguish when fishing by jigger. That same method would be next to impossible to determine in a loaded seine of 50 or 100,000 lbs, which in turn would mean the possibility of undersized fish being landed by that type of gear is likely 150% greater then by handline fishing! If this fishery is to stay sustainable and for future generations the amount of quota allotted for seiners should be substantially less and the hook line quota which is much easier to manage on every level should be left in a separate pool for only those small inshore hook and line fisherman to draw from! There is no denying that mackerel is getting to be a very valuable fishery in recent years and it should be managed properly to make it stay just that way!! I'm a young fisherman myself who is trying to support a young family and a crew of the same, but with having to compete with larger scale operations, it doesn't even give anyone a fighting chance at trying to keep working on the water " which is what a commercial fishermans job is!!!!" None of us want to be on X but it is instances like this that force us to do just that! This fishery needs a serious redesign of management but it needs outlooks from both frontline sides of it from the impacts on small and large scale operations!!!!!!!!
38	I believe there should be a defined season. Not opening until September and ending at the middle of December. Should be no fishing in July or August. Giving mackrel chance to grow.
39	no more seining or drifting for mackerel during spawning season
40	I feel that the mackerel are later coming to this area.They usually arrive in November.
41	Imposer une limite de maquereau pour la Peche sportives et un permit $$ pour un pêcheur sportif pour subventionnés les études futurs ... Ex comme la truite de rivière
42	The quota has been cut so much in the last few years that if it's to remain where it is it should be fairly and evenly divided up between provinces.
43	I feel that we should be allowed to take mackerel for our own personal use and I feel that it should not be any net mackerel allowed because they are all female and full of roe and its destroying the fish .i think that it should be ope n Ed now and closed in May and June .
44	In July and august the mackerel was very small and at the end of September it was a lot bigger.
45	We in the quebec do not keep the small fish under 263mm but new Brunswick nova Scotia and pei they do keep and sell the fish and profit from it there should be something done about this we try our best to keep to the regulations.the regulations should be enforced in other provinces besides quebec thank you also this is my living without mackerel fishing I do not know what I will do
46	Overall the size of the mackerel was small. In April,May and June the mackeral caught in the bait nets were large in size(20 inches +/-) Then jiggers were used from July on and the small (8-12 inch) Mackerel were more prodominant. Different times of the day you would catch bigger mackerel or in certian places where small bait such as pin fish or sandlance would hang out you could catch nice big mackerel there
47	Spring fishing should be not allowed any where the mackerel spawn. People are catching spawndy mackerel before they can repruduce .So stop landing spawndy mackerel.
48	There is a large number of small mackerel in tje area but as a responsible fisher i move on when in small fish in search of larger ones. I have travelled as much as 70 miles for large fish. If i am unable to locate large fish i simply do not have landings for the day
49	I wish the mackerel season was still open it affects us for lobster bait. It's another fishery the seigneurs are ruining. They catch a whole school all sizes when we jig there is no way to catch a whole school
50	why do the seiner kill all off the small pelagic stock?
51	10 3/8 size is too large for bait, our mackeral that we hand line is running 9 3/4 to 10 1/4, approx about 90 percent on most days from september to november. july and august usually has a larger run. all kinds of mackeral running this year size 9 3/4 to 10 1/4, the most i have ever seen.
52	I use to sell all to buyers but last 2 years just enough for my bait the following spring.
53	mackerel have increased since traps have not been used
54	get rid of the god dam seiners before they have everything destroyed
55	you got to get rid of the the mackerel wers and secens they are taken to many small fish
56	faire une demande de fermeture de la peche de juillet a fin aout pour permettre au maquereau de frayer librement et ce pour tout les provinces

	Comments
57	There was less small mackerel in the last two years compared to 4 or 5 year ago
58	Feel like there were more around this year then past years
59	Very disappointed in not being able to fish for own use and letting seiners go.
60	Allot of small Mackeral this year
61	cette année beaucoup plus de petit qu a l habitude
62	I think there should be a limit on the amount the public or rod and real can catch
63	whit the gill nets we just got big fish there is a lot of fish that is capture but not declare in the rest of the GUFL because the log bock is not mandatory wen you caught fish for there presenail use they don tn fill out log books and nobody cheek that
64	the mackerl was a bout 10% larger this year
65	2016 gillnet was all large mackerel in spring /jigging fall was missing an age class although did not pass 10 percent small no large amounts of medium to big until late in season when water temp began to drop
66	The Mackerel in our area were plentiful this summer with a better mix of size than last year.
67	with gill net we only catch the big mackerel 2016 was my best year ever for mackerel
68	Why was the mackrel season closed early? Left a lot of people including myself with now a very huge bait bill to have to pay for this upcoming spring. It costs so much to fish again PEI gets shafted. Only province that can't fish.
69	je peche a la limande
70	NFL+PEI: really big fish this year. seine and net license but don't use it. More mackerel bait because I stopped fishing herring.
71	Le maquereau ce capture mieux au printemps parce que il y a une cornée sur les yeux, en été il est plus difficile à capturer au fillet. Dans les années 1975 les grosses prises de mon père était de 12 000 lb dans une nuit (à la drift). Puis ce printemps 2016 il y a des pêcheurs du sud-est de la province qui sont venus pêcher dans notre coin avec les mêmes débarquements entre 12 000 lb et 16 000 lb part nuit. J'ai aussi pêcher avec un chalut bœuf puis on a prit des prise jusqu'à 40 000lb mais ça c'était en 1996 une couple d'année passé. Le maquereau est un poisson très difficile à capturer. Merci
72	Mackerel spawning season in our area is in mid June and July. During this time there is a Mackerel drifting fleet catching a large amount of fish that never have a chance to spawn. This fishery needs to be addressed to ensure the stocks of fish do not disappear. My phone # is X if there are any further questions.
73	To go with question 8. The spring run of mackerel was very large. The summer mackerel were very small. Some say the largest body of mackerel that had been seen in years was around for the month of June. Once they migrated through the little tiny mackerel arrived earlier than usual. I personally believe the mackerel population is healthy but I believe there should be some sort of method developed to better track landings.
74	The zones catching mackeral have changed. Mackerel have moved to the northern Gulf and western Newfouldland Labrador. DFO have allowed the large herring seiners into the mackerel fishery and our catches have plummeted. You should also contact Francois Gregoire of DFO for more scientific information.
75	i am not sure if you are aware or not or even care, these surveys serve only one purpose, that no matter what information or data is collected, dfo will manipulate it to further their agenda to close all inshore fisheries. mackerel and lobster is all I have left. A fishery will never be depleted when it is fished by hook and line, the problems are huge seiners .If you think you are doing something that is making a difference then you are sadly mistaken, you are only a pawn in a deceitful game to destroy the inshore fishery. Do youself a favor,take the road less traveled.
76	Le maquereau est en baisse autour des iles
77	Although the proportion of mackeral in 2016 were smaller, we just stopped fishing when we started to catch those under legal size. We HAVE TO STOP the larger fleets in the inshore waters from depleting our valuable fish stocks!!!
78	All I want is to catch some bait and the seiners are cleaning the schools
79	Sainers need more restrictions one boat one set they can land more then I could catch all year if your worried about stalk it's easy to see where you need to start with restrictions thank you
80	Do not fish mackerel much

	Comments
81	Macherel were better this year, but overall the macherel are going down over the past 20 years.
82	Not a big fan of seining your taking huge dips of mackerel out of the ocean at one time there's a gear type of fishing that should be shut down forever
83	We haven't seined for 20 years Fish stopped schooling up as they did in the 70tys and 80tys
84	The seine fishing destruct the stock in the international water
85	I fished mackerel for years with gill nets and a 2 7/8" mesh net you dont get small ones
86	Can't catch big fish when the siener fleet in Newfoundland catches 1000s of tons of sexually immature fish ! Need to be selective and not ruin a stock that has a renewing ability that if taken care of will be there for generations and generations to come
87	I personally feel seiners and some handliners are catching too many small mackerel. My nets average 75 to 150 mackerel per 125 lbs, I have bought mackerel for bait that would average 600 to 700 mackerel for 125lbs. A total disgrace for these small mackerel to be landed.
88	Last year there were Lots of large fish. This year none mostly small in all the areas that I fish. You can't seine hundreds of thousands and have the stock servive. The fishery here is sustainable all hand crank reels. If we hit small fish we move. We have to stop seineing before the stock follows the ground fishery.
89	Heard alot of people caught alot of small mackerel but I didn't. .the larger mackerel comes later when it's cooler
90	It is a fishery which needs attention. Mackerel has been over fished in NFLD. I know it has reduced overall quotas the past few years which is why I think we r seeing more small fish. This is normally fish taken by seine. I think it's a good sign to see this fish. But we need to make sure they r reaching maturity. Hand lining is not hurting the fishery. We move away from smaller fish before too much is landed. Which does not happen with seine. Or if it's released because it's too small, it's stressed and doesn't survive. But hand liners should not be included in the overall quota. We need our own quota.
91	As you can see, I did not fish mackerel the last number of years due to the fact they simply did not show up in reasonable quantities to make it worthwhile. This phenomena began some years ago, and we had always believed it was due to changing water temperatures, causing the fish to avoid our area in favour of the Newfoundland region.
92	We have notice schools of small mackerel behind the good size ones in 2016which lasted longer than other years.
93	Seiners are the ruination of mackerel fishery. Hook and jig will never ruin the fishery
94	Mackerel were scarcer in X in 2016 and they were smaller. I didn't fish much due to small mackerel. Mackerel had just gotten bigger when DFO shut the fishery down for the season.
95	There is a lot of landings not recorded like when some one catches some one else's bait they just exchange the mackerel from boat to boat no paper slips
96	En 2016 le maquereau etaient tres petit !! Environ 7-9"
97	Depuis que les seinneurs sont entrer dans la peche le mackereau est on chute libre
98	Le problème ce n'est pas les petit pecheur qui pêche commerciale ou pour appât, ce sont les gros bateau usine de terre neuve !! Ce sont les petits pêcheurs qui paient pour eux !
99	La distribution du maquereau change avec sa nourriture ainsi que la profondeur occupé. Capture abondante de petit maquereau à cause de sa biomasse très importante.
100	We have seen a lot of small mackerel early in july and aug. And a bigger run of big ones later in the fall.
101	Mackerel were late. The fact that there are very limited herring spawning makes mackerel hard to find. The mackerel finally showed up nice medium mackerel great for bait and we got shut down.
102	Quotas to large!
103	Mackeral have been significantly smaller for the last ten years
104	le poison nai pas égal des ané yen monte plus et dautre yen monte moin dans le fleuve comme le areng en moyenne sa se maintien pareille
105	Should not be allowed to catch mackerel during months of August and September.
106	Catching mackerel should be for caught by tradition gill net or jigger. Not large seiner
107	Pas pêcher 2016 pris seulement 50 petits maquereaux à 500 mètres du quai
108	most of the mackerel the last 15 years was small before that they would stay around till the first of November ,now they show up for 2 weeks in the summer around july and are long gone again before august, from 1970-2005 they were mostley big mackerel now they are lucky to be big enough to keep and that is only 10.5 inches to keep

	Comments
109	There were many mackerel in the harbours this summer but small in size.
110	It is my personal belief that the largest threat to the stock are large midwater trawlers and seine fishing as they kill most if not all of what is caught regardless of size where as gill nets allow the small fish to pass through unharmed and handliners can abort before doing much damage if they are in a small run of fish.
111	The mackerel fishery in my area is very important to me and I think this survey is also important. I have always been able to catch mackerel and for a number of years it has been on the increase and the stocks seem to be in great shape .
112	I took my clients to fish near an open pen fish farm. They were full of salmon pellets. But it drew and held them all summer and to the later part of October when I took my boat out of the water.
113	The small fish wher only in places. In aug and sept. Other months they wer large. All large in oct
114	This year would have been as good as last year if we were still going com. Mostly med & large in our area
115	There is no need to shut it down there is tons of fish around it is just causing a big shit show
116	Never caught mackerel in my harbour before the last 2 years. There was alot this season and they were big, just off my wharf.
117	Bigger makeral comming earlier in season, July and aug, then getting smaller in Sept and oct
118	I hope the survey will be accurate and useful
119	the area i fish usually doesn't see large mackerel until November/ December. Was out 4 times this year to look for bait, but maybe 1 in 10 mackerel would be large the rest small. I was out a few days before mackerel was shut down and the ratio had flipped to maybe one small one to ten big ones. Hope this helps!
120	I haven't fished in 4 years but ever since they said the mackerel was a none utilized species and let mid water trawlers and seiners go at them they have declined immensely
121	I just fished mackerel during spring lobster season as tried to go hand lining couple times this fall an there was no size to mackerel so it wasn't worth it.
122	stop fishing mackerel with the big seiners
123	Need to increase quotas in Gulf NS to and decrease the catchable size to clean up some of the smaller mackerel that are eating our small lobsters and herring spawn.
124	I just bought the lobster license and mackerel is going to be bait
125	mackerel eaten by striped bass. too much.
126	There are no large mackerel any more, only small. They are being overfished and the stocks in our opinion are dwindling. They should be handled for food only for a few years to allow the stock to recover.
127	Last question should be worded different .I did not land small fish but I did see more small fish from which I moved to another location or stopped fishing.
128	I used to go mackerel fishing to sell to the packers I the fall of the year. It was a little extra income and a boost during this time of year. Since the price went down and the mackerel have been harder to get I have only been catching mackerel for my own bait for the spring lobster fishery. We always get large mackerel in the spring of the year but when it is time for the fall they seem to be culled out. The hand liners are not the ones depleting the stocks. And my license doesn't gain much financial benefit by owning a mackerel license that I still have to pay for every year.
129	A commercial fishery in the spring for mackerel when they are full of spawn can't be helping the stocks.
130	Haven't fished mackerel the last few years. More small mackerel around.
131	The seiners are the major problem.
132	Fished for a week, only caught small mackerel that we had to throw back
133	Very little effort applied due to small size of the mackerel in the area
134	feel it is not getting out to most fishermen ,and almost all fishing from most fishermen is for bait only now as not near as many fish are showing up here now and what fish is showing up is a lot smaller most just make the size to keep 10 and half inches.
135	2016 mackerel fishery in newfoundland had the most mackerel we have seen for years
136	Seiners are the death of the mackerel population as seen on television
137	Hand line only in eastern Canada
138	have not fished mackerel
139	The quota is not on part with the stock. More science is needed

	Comments
140	The mackerel we bait our lobster trap with, is coming from Japan,California, etc... why can't anyone supply us with local product??
141	we buy our bait from X. he sells mackerel for bait for Lobster fishing which we do fish.
142	Couldn't understand some of the questions
143	Very small and not many if something is not done soon it will be to late
144	There are so many seals around now that it is hard to stay on them .the seals scathed them and make them harder to get any amount
145	electronic data collection instead of paper logbooks for all fisheries!
146	I seldom mackerel fish.. If I do I save the catch for next lobster seasons bait
147	global warming has changed migration pattern of mackerel
148	The average size of mackerel increased as the temperature of the water decreased into the fall season.
149	its hard for me to answer asl just fish with my grandkids for fun.
150	lots of mackerel no where to sell them
151	I believe makeral in our area is stressed , every year it seems more difficult to catch our own bait. What I like about gillnets is that they target appropriate sized mackerel
152	why do the seiners have larger potion of the allowable catch and can obtain smaller fish?
153	When we used to catch larger amounts of bigger mackerel there was also a greater abundance of herring which these bigger mackerel would follow to feed off of there spawn. It was right after the depletion of the herring stocks (caused by over fishing because of no limits) that these larger mackerel disappeared from our coastline. It seems to me to be to coincidental that the larger mackerel dis appeared around th same time that the herring did.
154	in the 1980's I caught more mackerel in a season with hand lines, than what was landed globally for the Magdalen islands in 2016
155	ONLY DO IT FOR BAIT AND NOT MUCH OF THAT NOW DAYS AS IT IS CAUGHT UP BEFORE IT GET TO WHERE I FISH AND A LOT SMALLER AS A FEW YEARS AGO YOU COULD GET THEM BIG ONES AND ONLY NEEDED 12 FOR A DOZEN ,NOW U GET SMALLER ONES.
156	Inshore lobster fisherman are using 2 1/2 inch herring net opposed to 2 7/8 this is a problem
157	I have fished between 35 to 40 years. In our area the quantity and size has greatly reduced over the years. Since the off shore fleets have been allowed to catch mackerel as a bycatch in their persecution of herring in the winter, etc.. our spring/summer mackerel fishery for bait has all but disappeared in X. I have to purchase approximately 90% of my bait from other areas and provinces. Fifteen to twenty years ago these numbers would have been reversed.
158	it,s not the hooks that hirt the fishing it,s the seiners the few mackerel we get with hooks for bait means nothing
159	I decided to give my information to the best of my ability regardless of the time frame prior to 2016 . I believe the large seiners / 65 foot + vessels / and the Seals are destroying the Mackeral / Herring fisheries as we once knew them and relied on for bait purposes for example !!
160	Il y a beaucoup de touristes qui pêche le maquereau après la pêches aux homards et il prenne beaucoup trop de petit maquereaux et ce naï pas bon pour la ressource il faudrait avoir une limites de prisse et de grosseur.
161	There should be a place for. no fishing actitity
162	I would like to see less Mackerel caught by the Seiner. They are taking all different size of mackerel and they can sweep a school of mackerel all at once.
163	0 catch no fishing for this species
164	Mackerel has ups and downs. Fish traps and big seiner catch the big mackerel in spring before they spawn hurt the stocks
165	What will you find out from this?
166	Je croit que pour la préservation de la ressource il va faloire penser diminuer la pêche printanière avec filet avec mailles de plus en plus petite même si non réglementaire pour laisser une chance à la reproduction car le macquereau du printemps à beaucoup de rave faux lui donner une chance à la reproduction
167	Is this DFO's way of getting dock side monitoring into the mackerel fishery? If it is, then it should be done for the recreational fisherman as well.
168	Mon permis nest pas actif car jai dautre especes a peche

	Comments
169	Early in the season there was an abundance of small mackerel, but as the months went on the bigger ones came too
170	Mackerel for a reason that I don't understand has become way to small
171	mackeral is looking good in our area the last 2 years in the spring fishery
172	This past summer (2016) there was the highest volume of small (tinker) mackerel that I can remember.
173	As soon as small mackeral showed up we stopped jigging
174	I threw back probably 60% of what I caught due to size being too small
175	seemed to be a lot more mackerel this year than others, however, the majority of them were smaller for the majority of the year, starting to get bigger ones now in the fall.
176	one yr. big, next yr. small. main problem is seals! can't commercial fish!
177	I think there should be a size limit (or slot limit) as well as a creel limit on mackerel. I also think they should not be used as bait for commercial fishermen (i.e.- lobster traps)
178	Was surprise on October 16, 2016 went to take family out to catch some mackerel and fisherman at wharf told us all the fisheries were closed quotes were filled.
179	There are several very popular spots around Halifax that are easily accessible and heavily fished. The retention of undersized mackerel is astronomical. Most trips out I would have to "remind" people that there is a size limit. More enforcement (ANY enforcement really) and perhaps signage at these popular spots would help.
180	In 2016 mackerel fishing closed unexpectedly without any notice.
181	Season closed without any notice.
182	Remove mackerel seiners from the fishery if conservation is a concern.
183	caught smaller mackerel in June ,large mackerel caught at the end of October
184	There was lots of mackerel around started to bite on hooks a bit earlier it seams
185	Seiningers are a huge problem with mackerel/herring in the gulf, smaller jigger/gillnetting boats only make a scratch compared to the sieners
186	In my personal opinion the mackerel quantity and size have decreased significantly over the last five years and something should be done in order to protect the population of the industry. Most of the mackerel being landed were "smelt" sized this year.
187	There shouldn't be baits license give to recitation fishermen other then lobsters and crabs fishermen
188	In order to give you some clarity. You should understand that the last time I fished mackerel was 2010 Landed about the same amount albeit in a shorter span. I don't see this as a stock issue so much as a trend For example in speaking with fishers who did mackerel last year. There was no problem with quick well sized landings.. The year before... A little more effort required, as I remember hearing, but still good landings and size.. Thank you
189	Pas d'acheteurs sur la côte nord. Pratiquement aucune Peche aux maquereaux.
190	to many large seiners catching the large mackerel in spring of year, especially in Newfoundland amount of mackerel decreased 50% over the last 10 years
191	In 2016 mackeral stocks off X, N. S. are just as strong as I have ever experienced. (jigging with " feathers") Larger average size "keepers" than the last few years; but lots of undersize also.
192	I only fish a small portion mostly for food consumption.
193	all small mackerel
194	huge seiners are killing the fishery. handling allow small ones to return to ocean and causes much less damage and less chance of ghost fishing from lost gear. setting nets is dumbest idea ever. I don't bother with the fishery lately since it is too hard to make it worthwhile.
195	I stopped fishing mackerel years ago due to obviously decreasing size and amount of the fish. But this didn't seem to bother other people especially seiners because this is the only explanation for the collapse of the species. Same as with herring- little or no selectivity of size caught with certain types of gear!
196	The size of mackeral fluctuates last year the fish we're a good size this year small

	Comments
197	It has only been with the purchase of a freezer that I have been catching more mackerel for bait than buying it. And this only occurred in the last 5 years, before this since I did not have a freezer any mackerel I caught I would have had to throw away or use my own personal freezer from home. So in reality I can provide comments for mackerel catches for twenty years but it has only been the last few years that saw me change my personal fishing habits due to a change in technology. In other words my purchase of a freezer which though not new tech is a new addition to my fishing enterprise.
198	Macheral does not seem to come close enough to shore to fish. Macheral seem going Pass, Farther out in the ocean.
199	over the last 5-7 years I have seen large numbers of small mackerel ,it looks good for the future. I only get the larger ones for bait and myself and I have no problem getting them.
200	J'ai pas peche en 2016 mais 2015 90% de mes prise sont de la péchés commercial vendu à l'usine 100% déclarer dans les journaux de bord
201	I think that this survey should be taken seriously and I'm hoping to get the results from what fishermen experience and not by what biologist think it is
202	have been fishing mackerel for bait
203	Somewhat concerned regarding the recreational waste of small mackerel during summer derby's and wharf fishing.
204	I feel mackeral quota should be seperate for each province and each zone so any one aera can be shut down when each zone reaches the share of quota alloted.
205	Seals destroy our nets so much that it is hard to fish mackerel like we did 20 years ago
206	we used to have a mackeral fishery here its gone the big mackeral would come first now they come one night then they are gone WE ONly had to go a little off the shore to catch fish now i have to go 4 miles and use a 2 and a quater inch mesh net to get any mackeral at all i suppose u will take this fishery from me also. The anger i feel toward DFO is hard to express here these coastal communities are surviving on lobster and crab everything else is gone. Nobody is going to stand up to big fish companies.
207	I'm just a recreational fisherman but have been so for 50 years. I have never in my life seen anything like the tiny mackerel being caught in 2016. There were no big mackerel caught by me or by anyone I know, and I do know a dozen or so recreational fishermen. Also, it is very difficult to safely release undersized mackerel caught on a line. Good luck! I fear for this species.
208	This is a fishery that, as many others, is changing quickly with global/ local changes to the environment. Speaking only for my area, (X)) 2016 saw an incredible amount of small mackerel for an unusual amount of time. Normally this situation lasts about 2 weeks in July/ August (has been getting later over the past 10 years.) D.F.O. needs to update with the modern age to have sub areas for Mackerel (area 16 covers from Gaspe point to the north east point of cape Bretton) that can be CLOSED and OPENED quickly. Every boat fishing today has a cell phone and internet capability. Information travels quickly through fishing fleets and this is the new reality .
209	I do see that the mackerel are getting smaller
210	I did not fish mackerel, but I buy it for bait for lobster and crab fishing, good luck with your survey. Sincerely X
211	Your last question should of had a place to respond. When the water warms up the smaller mackerel show up and the bigger mackerel move on to colder water wherever that maybe.
212	mackerel run on a cycle up 1year and down the next
213	do something about the f#@king seiners, they're the reason our mackerel and herring are in the trouble they are. absolutely pathetic
214	Did not fish mackerel this year
215	It should be closed I did not fish in 2016 because the fish were so small
216	the big sieners are distroying the stocks but that doesn't surprise me when you got DFO INVOLVED THE SEEM TO DISTROY EVERY THING THEY GET INVOLVED IN

	Comments
217	if dfo doesnt take responsibility for the mismanagement of mackerel it will not recover , the over capacity in new found land has to be addressed , either buy out the seiner fleet and gear and destroy it or we are frigged . my views are no boat over 45ft should be in the fishery whether it commercial or on a by catch . mackerel was in good shape stock wise until DFO allowed NFLD to over exploit a healthy stock forcing the traditional fishers off the water , and i was in NFLD where i saw boats that were 45 ft and after a good season of mackerel rebuild their boats to 65ft doubling their capacity with no restrictions and as ive learned they can go as long as 82ft without restriction this has to be reversed the mackerel cant survive in those areas with about 1000 seiners chasing them, in scotia fundy only 47 or so licenced mackerel seiners exist ,with limited access or no allowance to new licences and why NFLD is so different . The only way that mackerel can rebuild is to extract the recent over capacity issue and to hold on to the 8000 ton tac for at least 5 more years to have 1 full rotation of what looks like a very good spawning year class . i dont know if you know this but at this time of year the average size of mackerel should be around 2 pounds and not a half of a pound , we have caught them in the 3to 4 pound range in november thank you X november 8 2016
218	no large mackerel in St. Georges Bay during July and August. Some around in May. Lots of small mackerel all lobster season and all summer
219	There has been many complaints and worries about the mackerel fishery... interestingly enough it seems to have come about in the same manner as the talks of herring stocks... if you look back at statistical data the mackerel stocks in the gulf region were good in the past when there was little or no seining involvement... Our herring stocks were depleted years ago with a seining fleet roaming our waters as well as the U.S. seaboard. The seining was put on hold and our herring stocks to the inshore returned... They were reopened and they disappeared... Mackerel seem to be following the same pattern. When left to a gillnet and handline fishery things seemed to stay in balance... but with the the disappearance of so many fish stocks, the seining of mackerel became a must for some in order to continue to stay in the fishery. Although i do not pretend to be an expert and am empathetic to all fisherman as to the difficulties at times in continuing our earnings from the sea, we all share a part in managing this.... sometimes bigger is not always better for long term viability. We need to understand that selective style fisheries may in the long term benefit us and our future generations... Perhaps it is time for us not to blame one another, but to look at our resources as valuable for the long term. Instead of for the short term gains of a few or as political gains for the moment. Do I believe we have trouble in the mackerel fishery? Of course we do as we do in many fisheries, but our biggest problem is more in our governing bodies who make decisions not on fact but on politics, money and power... As a direct comment on the survey i did notice there seemed to be many small mackerel in the waters throughout the summer months... These mackerel should be allowed to reach maturity before they are harvested to protect their future and ours as fisherman. They also should be harvested in a matter that is selective both in size and in the assurance that entire schools and age classes of fish are not gobbled up in one brief moment... We need their survival (this includes all species), for our survival as fisherman and our future generations of fisherman...
220	There was a lot more small mackeral this year then other years
221	last dec. I seen a large amount of small mackerel while lobster fishing
222	The mackerel comes and goes in cycles
223	the time run has changed
224	some fish damaged (mouth parts rip) during rec fishing and fall off line, possibly they die but unsure. Also they can fall between rocks in breakwater so they are not retrievable and they certainly die. In total, estimated to be about <1/5th of fish hooked
225	please protect this stock i want to return to this fishery as a viable industry 1 which i hold dear and love to partisapate in but now i have to lobster fish which i dont enjoy its just away to earn a living , over capasity is the problem please fix it
226	I don't catch more than I can eat.

	Comments
227	I am a young captain in the fleet in X and I have been fishing mackerel for 17 years , the last 6 or 7 years as a captain and I can say that for the last 4 to 5 years since landings have droped every bay on the west coast and I mean every bay has been full of small mackerel where ever you went. it seems to me that the small mackerel obivisuly had to come from big mackerel but were not showing up for commercial seining catches until really late in the season which leads me to belive that the mature mackerel stock migrated further north in the gulf to there preferred tempeture range for spawning. no dought there was still some mature mackerel still in the southern parts of the gulf with hook and line catches proving this on a regular basis from august on through but they were dispursed through the water from warmer waters then past years and with the juniveal mackerel stock ... in my conclusion I can say from the past 4 or 5 years with a strong junieval population and the mature mackerel stock that was fished this year there is going to be a healthy mackerel fishery definatly for the next 7 or 8 years same as it was from 2000 until 2009 if we are alwoded to fish it. This is the best way to get info as you are doing no one know better then fishermen, and if anyone else puts in on this survey from X that is involved in seining they will tell you the same thing THANKS for wanting peoples input X
228	Only fish for mackerel while on holiday each year.... I have noticed they have declined in numbers
229	size limit is great.10 3/4 inches or larger
230	No large mackerel in area
231	In the 70's and 80's from the middle of May until the first couple of weeks of June the ocean off of Nova Scotia would be alive with the biggest kind of mackeral. These latter years there is nothing but a few tinkers.
232	Lots of mackerel mixed up in size seemed to be larger in August when the water is warmer
233	As a recreational fisherman who eats every mackerel that he catches, it is very disheartening to see commercial fishermen catching massive numbers of fish just for bait. It seems like a huge waste of good fish. Mackerel have very little commercial value so the professional fishermen catch hundreds of thousands of pounds to make a meaningful amount of money. Meanwhile all the species that rely on mackerel (and other baitfish like herring) struggle to find enough food, and the recreational fishery suffers. This year big mackerel were exceptionally rare because I believe commercial fishermen caught so many of them up.
234	Stop the fishing by commercial fishermen for bait!
235	appears to be a high proportion of small fish [TALKING TO OTHER FISHERS]
236	I threw most of the mackerel back because they were too small. They will be bigger next year
237	for the last few years all were seeing for the most part is small to medium size mackerel
238	Il y des prise de maquereau le 31 octobre et même en début novembre
239	We used to be able to fill buckets at a time, now wed be lucky to fill a coleman cooler a season
240	I would appreciate if you would call me at X. Thank-you, X
241	When they close the mackerel season, the mackerel only then hit the X area.We could not fish the herring because there was to much mackerel. The mackerel only left the bay on nov 25 2016.Every day we would see the mackerel scool on the water .
242	2016 was the first year I've fished mackeral in a few years. What we saw was a good run of bloaters (large mackeral) at the start of the season followed by a fairly steady run of good sized mackeral for the rest of the season.